



**TVJ6AC-1, TVJ6AC-1/LPP  
AND TVJ6MS-1**

**Motorized Zoom Lens**

**Installation/Operation Manual**

**C707M-B (11/96)**

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## REVISION HISTORY

<b>Manual #</b>	<b>Date</b>	<b>Comments</b>
C707M	9/94	Original version.
C707M-A	12/94	Revised to include the TVJ6AC-1/LPP lens, which accommodates preset positioning commands.
	1/96	Preset lens colors for connectors 6 and 8 changed in Section 4.2.
C707M-B	11/96	Changed wiring in Section 4.2.1.1.

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# INSTALLATION/OPERATION MANUAL TVJ6AC-1, TVJ6AC-1/LPP AND TVJ6MS-1 MOTORIZED ZOOM LENSES

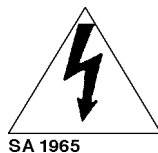
## 1.0 WARNINGS

Prior to installation and use of this product, the following WARNINGS should be observed.

1. Installation and servicing should only be done by Qualified Service Personnel and conform to all Local codes.
2. Unless the unit is specifically marked as a NEMA Type 3-6P enclosure, it is designed for Indoor use only and it must not be installed where exposed to rain and moisture.
3. Only use replacement parts recommended by Pelco.
4. After replacement/repair of this unit's electrical components, conduct a resistance measurement between line and exposed parts to verify the exposed parts have not been connected to line circuitry.

### This product may bear the following marks:

This symbol indicates that dangerous voltage constituting a risk of electric shock is present within this unit.



**CAUTION:**  
TO REDUCE THE RISK OF ELECTRICAL SHOCK, DO NOT REMOVE COVER. NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

This symbol indicates that there are important operating and maintenance instructions in the literature accompanying this unit.



**CAUTION:**  
RISK OF ELECTRIC SHOCK.  
DO NOT OPEN.

**Please thoroughly familiarize yourself with the information in this manual prior to installation and operation.**

## 2.0 SCOPE

The information contained within this manual covers the installation and operation of Pelco TVJ6AC-1 and TVJ6MS-1 motorized zoom lenses.

Installation should be in accordance with all applicable local and national electric codes, utilizing approved materials only.

Please thoroughly familiarize yourself with the information in this manual prior to installation and operation.

## 3.0 DESCRIPTION

Pelco's TVJ6AC-1 and TVJ6MS-1 are 2/3" format motorized zoom lenses designed to provide remote control of zoom, focus and iris functions on the TVJ6MS-1 lens, and zoom and focus only on the TVJ6AC-1 lens. These lenses feature color corrected professional quality optics.

The TVJ6MS-1 is equipped with a tapered neutral density spot filter as an integral part of the lens to permit light attenuation beyond the normal range of a zoom lens down to f360. The spot filter is densest toward the center and decreases toward the circumference, permitting operation of low-light level cameras in brightest daylight down to minimum required faceplate illumination.

The TVJ6AC-1 is equipped with a tapered neutral density spot filter and internal automatic iris electronics for fully automatic iris operation on low-light level CCTV cameras.

Models with the letters "LPP" in the part number are equipped with potentiometers for the zoom and focus drive motors, providing a means for preset positioning commands from a microprocessor based control unit to automatically drive zoom and focus functions.

## 4.0 INSTALLATION

### 4.1 CABLE DISTANCES

The following distances are for reference only and are the approximate maximum recommended under the following conditions:

- 30mA maximum at 12 VDC
- Single lens function activation
- Single common conductor in lens cable
- 10% loss in voltage

- 22 Awg to 1,236 feet (377 m)
- 20 Awg to 1,968 feet (600 m)
- 18 Awg to 3,133 feet (955 m)
- 16 Awg to 4,974 feet (1,516 m)

**NOTE:** Video limited to 500 feet on RG-59 coax cable without equalization amplifier.

### 4.2 WIRING

#### 4.2.1 TVJ6AC-1 Motorized Zoom Lens

This lens features a spot filter and internal auto-iris circuitry for use with low-light level CCTV cameras.

The auto-iris circuitry must sample either composite or non-composite video from the camera and be supplied with 9 to 18 VDC. Functions are on a separate cable.

##### 4.2.1.1 Wiring Pinouts

Wiring is as follows:

Function	Color	Connector Pin Number
Zoom	Green	2
Focus	White	3
Common	Black & Red	4

Small 4-Conductor Cable*	Auto Iris Cable
Red wire	VCC (+9 to +18 VDC)
Black wire	Ground
White wire	Video Signal
Green wire	VCC (+9 to +18 VDC)

\*Plug for this cable is provided with the camera.

### 4.2.1.2 “LPP” Type Wiring

Wiring for “LPP” type lenses is as follows:

Function	Color	Connector Pin Number
Iris (see note below*)	Green	1
Zoom	Red	2
Focus	Blue	3
Common	Black	4
Pot Supply	Yellow	6
Zoom Feedback	Gray	7
Common Feedback	Brown	8
Focus Feedback	White	9

\* **NOTE:** This wire is only used on “M” and “MS” type lenses.

Small 4-Conductor Cable*	Auto Iris Cable
Red wire	VCC (+8 to +18 VDC)
Black wire	Ground
White wire	Video Signal
Green wire	Not used

\*Plug for this cable is provided with the camera.

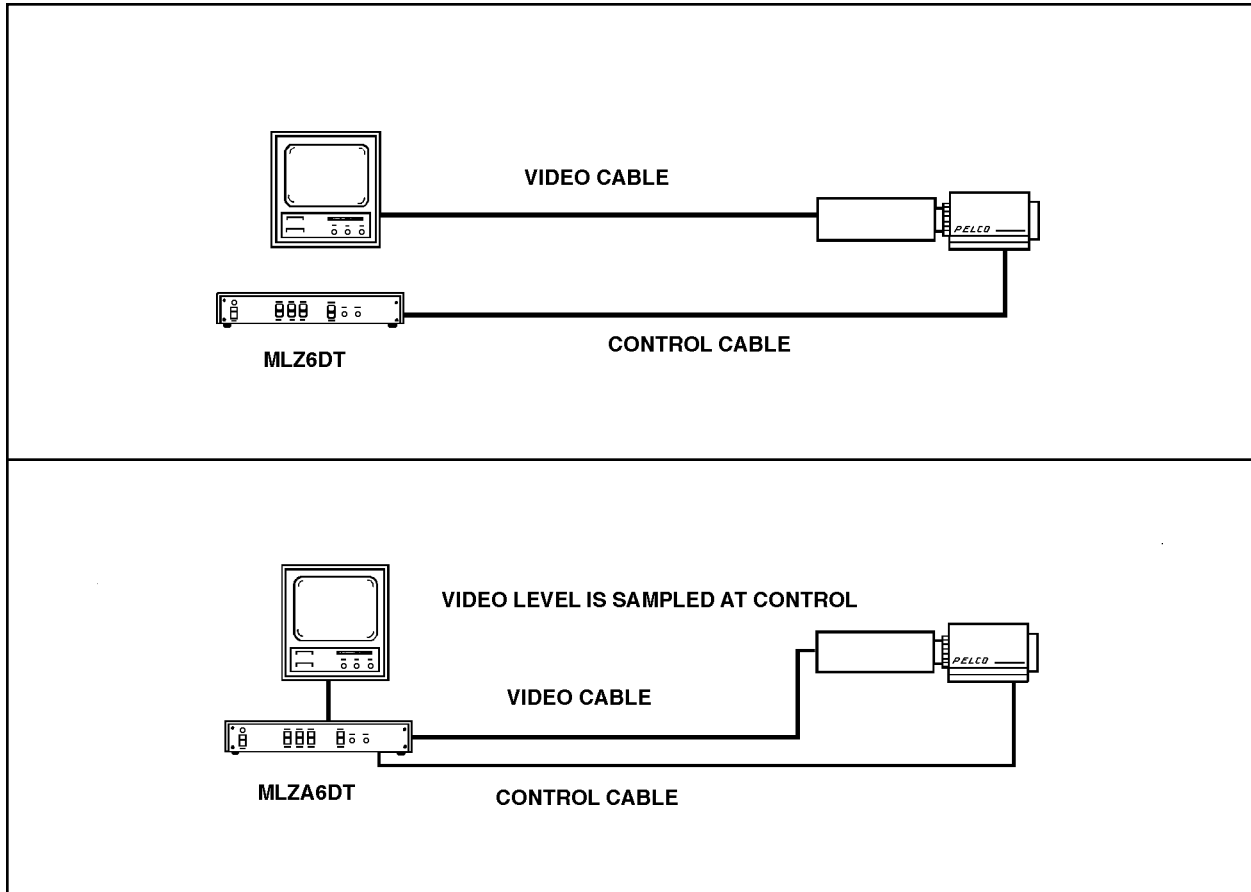


Figure 1. System Configurations

## 4.2.2 TVJ6MS-1 Motorized Zoom Lens

This lens has a tapered neutral density spot filter and has fully controllable zoom, focus and iris functions.

### 4.2.2.1 Wiring Pinouts

Wiring is as follows:

Function	Color	Connector Pin Number
Iris	Red	1
Zoom	Green	2
Focus	Red	3
Common	Black & White	4 (see note)
Iris Common	Black	5 (see note)

**NOTE:** Pins 4 and 5 are jumpered together. (See Figure 2.)

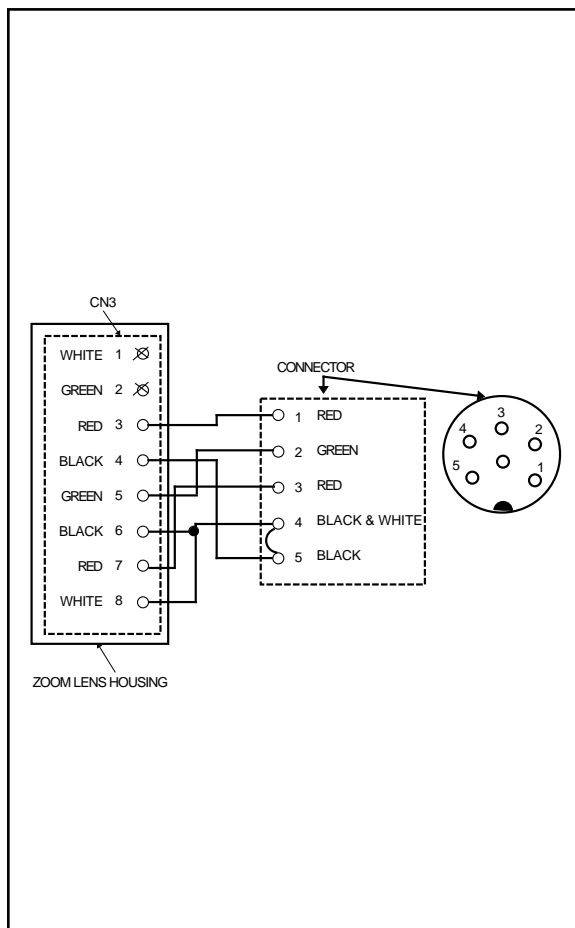


Figure 2. TVJ6MS-1 Connector Wiring

## 4.3 AUTO IRIS ADJUSTMENT

This adjustment is initially set at the factory and in most cases will not require further adjustment. If, however, after installation is complete it is determined that further adjustment is necessary, please follow the procedures as outlined below:

1. With the camera installed in its operating location, interconnect it to a video monitor.
2. Locate the adjustment potentiometer access hole identified on the lens body as **LEVEL** and remove the dust plug.
3. Using a small standard or Phillips screwdriver, adjust the **LEVEL** potentiometer while at the same time viewing the picture on the video monitor, rotating counterclockwise for a brighter picture or clockwise for a darker picture. This adjustment should be done in very small increments of rotation, pausing between each rotation allowing the auto iris to react and adjust.
4. With adjustment complete, ensure replacement of dust plug.

## 4.4 MOUNTING ZOOM LENS ON CAMERA

Pelco motorized zoom lenses can be easily mounted on any CCTV camera with a standard 16 mm "C" mount by carefully screwing the lens onto the camera. These lenses are designed with self-orienting friction type "C" mounts. To obtain correct orientation after threading lens onto camera, gently continue rotation beyond the point where lens and camera threading rotation stops. At this point you will feel the self-orienting action begin. Continue rotation until proper alignment is obtained.

## 5.0 MOUNTING THE LENS IN AN ENCLOSURE

Follow the mounting instructions provided with the enclosure. Cameras with a low optical centerline or using a large diameter lens will require an elevation block for proper elevation and mounting within the enclosure.

**IMPORTANT:** Set focus for shortest distance (focus near) to extend the lens to maximum length before positioning camera/lens combinations. This will ensure that the lens has enough clearance and will not come in contact with the window during focusing.

## 6.0 TRACK ADJUSTMENTS

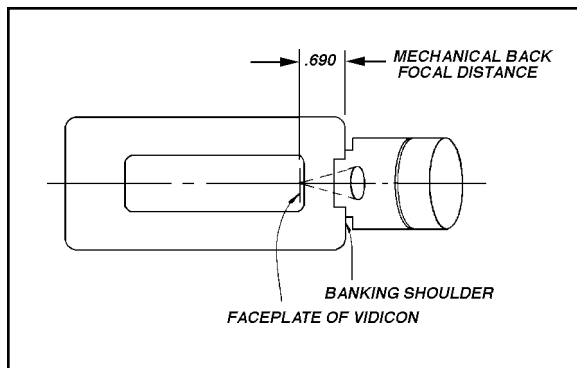
In order for a zoom lens to hold tracking focus through the full zoom range, the effective distance from the banking shoulder of the mounting thread to the image plane of the camera (faceplate of Vidicon) must be 0.690 inches. This is a screwdriver adjustment on most cameras and is referred to as the “mechanical focus adjustment” (see Figure 3).

If you find that your camera system does not have sharp focus upon installation, follow these procedures to adjust the focus:

1. Select an object as a focusing target at least 75-100 feet from the camera/lens.
2. Open iris (aperture) to fully “open” position.
3. Zoom lens out to maximum “tele” position, and adjust lens focus for sharpest picture.
4. Zoom lens back to the “wide” position, and adjust mechanical focus on the camera for sharpest picture.
5. Repeat steps 3 and 4 until focus is sharp through the full zoom range.

## 7.0 CARE AND MAINTENANCE

Field maintenance of motorized zoom lenses is not recommended. However, if maintenance or repair should be required, consult Pelco or a qualified service technician.



**Figure 3.** Mechanical Focus Adjustment

## 8.0 MODELS

TVJ6AC-1	6X (12.5 to 75 mm), f1.2 motorized zoom lens, 2/3" format, auto iris and tapered neutral density spot filter
TVJ6AC-1/LPP	Same as TVJAC-1 except with preset position potentiometers and tapered neutral density spot filter
TVJ6MS-1	6X (12.5 to 75 mm), f1.2 motorized zoom lens, 2/3" format, non-auto iris, with tapered neutral density spot filter

## 8.1 RECOMMENDED CONTROLS

MLZ6DT	Desk top lens control module designed for remote control of zoom, focus, and iris functions for motorized zoom lenses. Speed control is adjustable from the front panel. This control can also be used with TVJ6AC-1 lens, however, the iris will not be controllable. See Figure 1 for system configurations.
MLZA6DT	Desk top zoom lens control with auto-iris servo circuitry. Provides auto-iris operation to the TVJ6MS-1 lens if auto-iris function with manual override capability is required. Not for use with TVJ6AC-1 lens.

(Product specifications subject to change without notice.)

## 9.0 WARRANTY AND RETURN INFORMATION

### WARRANTY

Pelco will repair or replace, without charge, any merchandise proved defective in material or workmanship for a period of one (1) year after the date of shipment. Exceptions to this warranty are as noted below:

- Four (4) years on all standard motorized and fixed focal length lenses.
- Two (2) years on Legacy®, Intercept®, CM8500/CM9500/CM9750 Matrix, and DF8 Fixed Dome products.
- Two (2) years on WW5700 series window wiper (excluding wiper blades).
- Two (2) years on cameras.
- Six (6) months on all pan and tilts, scanners or preset lenses used in continuous motion applications (e.g., preset scan, tour and auto scan modes).

Pelco will warranty all replacement parts and repairs for 90 days from the date of shipment. All goods for warranty work shall be sent freight prepaid to our Clovis, California facility. Repairs made necessary by reason of misuse, alteration, normal wear, or accident are not covered under this warranty. Pelco is not liable for any incidental or consequential expenses or liability incurred by the customer as a result of field repair, installation, or any other reason.

The above warranty is in lieu of any other expressed or implied warranty, condition, or guarantee by Pelco of the equipment listed herein. Pelco makes no warranties except for intended use and will not be liable for any loss, damage, or costs arising, whether consequential or incidental, from the use of said merchandise.

This warranty gives you specific legal rights. You may also have additional rights, which are subject to variation from state to state.

If a warranty repair is required, contact Pelco at **(800) 289-9100** or **(209) 292-1981** for a Repair Authorization number (RA), and provide the following information:

1. Model and serial number
2. Date of shipment, P.O. number, Sales Order number, or Pelco invoice number
3. Details of the defect or problem

If there is a dispute regarding the warranty of a product which does not fall under the warranty conditions stated above, please include a written explanation with the product when returned.

Ship freight prepaid to: Pelco  
300 West Pontiac Way  
Clovis, CA 93612-5699

Method of return shipment shall be the same as method by which the repair item is received by Pelco.

### RETURNS

In order to expedite parts returned to the factory for repair or credit, please call the factory at **(800) 289-9100** or **(209) 292-1981** to obtain an authorization number (CA number if returned for credit, and RA number if returned for repair). Goods returned for repair or credit should be clearly identified with the assigned CA/RA number and freight should be prepaid. All merchandise returned for credit may be subject to a 20% restocking and refurbishing charge.

Ship freight prepaid to: Pelco  
300 West Pontiac Way  
Clovis, CA 93612-5699